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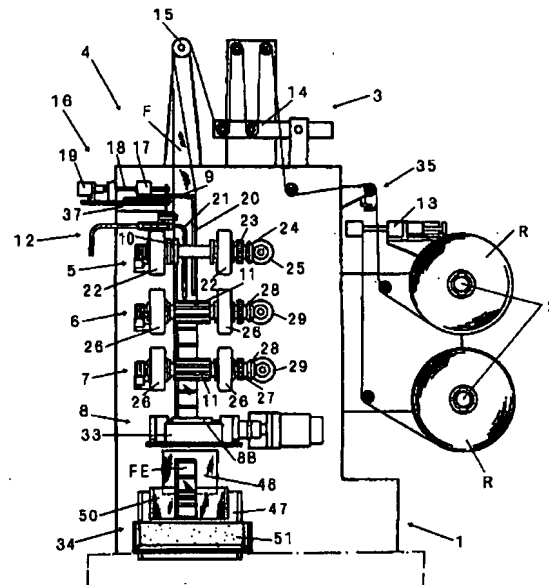
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(54)【発明の名称】 充填包装機

(57)【要約】

【目的】 フィルム継ぎ目箇所を検出し、継ぎ目箇所に該当した小袋を不良品として扱い、その不良品として扱った包装袋と良品である小袋とを自動的に振り分けて搬出すること。

【構成】 フィルム巻反R位置とフィルム折返部4位置との間フィルム継ぎ目箇所J、J1を検出するフィルム繋ぎ目検出部35を設け、カッター部8の下方に位置してフィルム繋ぎ目検出部35からの信号を受けて作動する仕分け受板48を備えた小袋搬出部34を設け、前記フィルム繋ぎ目検出部により通常のフィルム箇所とフィルムFの継ぎ目箇所J、J1とを判別し、かつこのフィルム継ぎ目箇所J、J1の包装袋FEを前記小袋搬出部34に設けた仕分け受板48によって振り分け搬出する。



【特許請求の範囲】

【請求項1】 ロール状に巻かれたフィルム巻反からフィルムを引き出し案内し、この引き出し案内されたフィルムをフィルム折返部に送り、このフィルム折返部によりフィルムを筒状に折返し、この折り返されたフィルムの折返両端縁を重ねて縦ヒートシールロールにより縦シールしてフィルムを筒状に形成するとともに、横ヒートシールロールにより横シールして包装袋となる底部を形成し、この有底筒状に形成したフィルム内に内容物を充填し、さらにフィルムを送りつつフィルムの袋口側となる箇所を横ヒートシールロールにより横シールして連続包装し、この横シール部分の中間部をカッター部で切断可能に設けた充填包装機において、前記フィルム巻反位置と前記フィルム折返部位置との間にフィルム縫ぎ目箇所を検出するフィルム縫ぎ目検出部を設けるとともに、前記カッター部の下方に位置して前記フィルム縫ぎ目検出部からの信号を受けて作動する仕分け受板を備えた小袋搬出部を設け、前記フィルム縫ぎ目検出部により通常のフィルム箇所とフィルムの縫ぎ目箇所とを判別し、かつこのフィルム縫ぎ目箇所の包装袋を前記小袋搬出部に設けた仕分け受板によって振り分け搬出するようにしたことを特徴とする充填包装機。

【請求項2】 前記フィルム縫ぎ目検出部によってフィルム縫ぎ目箇所であることを判別した時に、フィルム縫ぎ目検出部の信号に基づき前記カッター部の切断作動を停止し、前記フィルム縫ぎ目箇所の包装フィルムの前後位置を連包したまま排出するようにしたことを特徴とする請求項1記載の充填包装機。

【請求項3】 前記フィルムの縫ぎ目箇所以外のフィルム箇所においては、前記カッター部の切断作動を停止するとともに、前記フィルム縫ぎ目検出部によってフィルム縫ぎ目箇所であることを判別した時に、フィルム縫ぎ目検出部の信号に基づきフィルム縫ぎ目箇所の包装フィルムの前後位置のみを前記カッター部で切断作動し、その切断されたフィルム縫ぎ目箇所の包装袋を前記小袋搬出部に設けた仕分け受板によって振り分け搬出するようにしたことを特徴とする請求項1記載の充填包装機。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、ロール状に巻かれたフィルムを製袋して、その小袋内に液体、粉体あるいは粘稠物質などの内容物を充填する充填包装機に関するものである。

【0002】

【従来の技術】液体、粉体あるいは粘稠物質などの内容物を自動的に充填包装する従来の充填包装機としては、例えば特開平2-46265号公報や特開平2-32929号公報などに示されているように、連続移送されるフィルムを折返し、そのフィルムの折返両端縁を重ねて縦シールし、この縦シールしたフィルム内に内容物を充

填し、このフィルムを横シールするものが知られており、この一例を図12から図14により説明すると、同図において、1は機台であって、その側部には保持枠2が設けられ、この保持枠2にフィルムFをロール状に巻回したフィルム巻反Rが着脱交換可能に設けられ、機台1の上部にフィルム案内部3およびフィルム折返部4を配設し、機台1の前面部に上側から縦シール部5と第1、第2の横シール部6、7およびカッター部8が備えられ、一方のロール状フィルム巻反RよりフィルムFを引出し、フィルム案内部3を介してフィルム折返部4に導出し、フィルム折返部4に設けられた先端がU字状をなす折返しガイド9によりフィルムFを長手方向に沿って二つ折りし、縦シール部5の対向する一対の縦ヒートシールロール10でフィルムFの折返し端部同士を熱シールして送り出し、この縦シール箇所F1によりフィルムFを筒状に形成し、第1の横シール部6の対向する一対の横ヒートシールロール11、11でフィルムFを横方向に熱シールし、この横シール箇所F2により包装袋となる底部を形成し、これにより有底筒状に形成されたフィルムF内に充填機構12により、たとえばソースなどの液体からなる内容物Wを充填し、さらにフィルムFが送られて再び第1の横シール部6の横ヒートシールロール11、11によりフィルムFの袋口側を横シールして内容物Wを封止し、この横シール箇所F2を第2の横シール部7の横ヒートシールロール11、11によってさらに封着し、次いで横シール箇所F2の中間部をカッター部8で切断し、これによってフィルム包装を行い、図示しないコンベアなどで取り出し搬送するように構成している。

【0003】

【発明が解決しようとする課題】上述した従来の充填包装機においては、一つのフィルム巻反Rが終了したときに装置の運転を一旦停止し、新たなフィルム巻反Rを装填してフィルムFを引き出し、このフィルムFを装置の一連のガイドローラ間に手作業によって案内掛けし、さらに幅方向の位置出しをし直すなど手間のかかる作業が行われていた。

【0004】この点を考慮するものとして、予備のフィルム巻反Rを予め包装機の機台1の側方にセットしておき、使用中のフィルム巻反RのフィルムFが消費されてしまった時に自動的に予備のフィルム巻反RからのフィルムF始端側へと接続するフィルム接続機構が提案されている。

【0005】この場合、フィルムFの縫ぎ目箇所Jが包装した小袋FWの一部にかかってしまうと、その包装形態が悪くなりやすく商品価値が低下してしまい、場合によっては縫ぎ目箇所Jから内容物Wが洩れ出ることがあり、これにより縫ぎ目箇所Jにあたる小袋FWを不良品として扱い選別しなければならないという問題があり、手作業でその不良品を取り除くにしても手間のかかる作業であった。

【0006】またフィルム巻反Rの中には、その製造工程上においてフィルムFの長さの間隔が短いと、その短い同志のフィルムFを繋いでロール状に巻き込み1つのフィルム巻反Rを形成する場合があります、この場合にあってフィルム巻反Rの途中を繋ぐことによりフィルムFの縫ぎ目箇所J1が存在するために前述したように、装置によって製袋して小袋FWを作るときにその小袋FWの一部にロール状のフィルム巻反Rの縫ぎ目箇所J1がかかってしまうと、その包装形態が悪くなってしまうため、不良品として扱い良品の小袋FWと選別しなければならないという問題があった。

【0007】また充填包装機に設けたカッター部8の作動を停止状態とし、縦ヒートシールロール10と横ヒートシールロール11によって小袋FWを連続して連包状態に包装したまま搬出させて箱に収納するようにする場合にあっては、前記各フィルムFの縫ぎ目箇所J、J1にあたる小袋FW部分のみを確認しながら不良品として選別し、その縫ぎ目箇所J、J1の小袋FWをカッターなどによって手作業で取り除かねばならないため非常に厄介であった。

【0008】そこで本発明は包装作業工程において、フィルムの縫ぎ目箇所を自動的に検出し、縫ぎ目箇所に該当した小袋を不良品として扱い、その不良品として扱った包装袋と良品である小袋とを自動的に振り分けて搬出することのできる充填包装機を提供することを目的とする。

【0009】

【課題を解決するための手段】本発明はロール状に巻かれたフィルム巻反からフィルムを引き出し案内し、この引き出し案内されたフィルムをフィルム折返部に送り、このフィルム折返部によりフィルムを筒状に折返し、この折り返されたフィルムの折返両端縁を重ねて縦ヒートシールロールにより縦シールしてフィルムを筒状に形成するとともに、横ヒートシールロールにより横シールして包装袋となる底部を形成し、この有底筒状に形成したフィルム内に内容物を充填し、さらにフィルムを送りつつフィルムの袋口部側となる箇所を横ヒートシールロールにより横シールして連続包装し、この横シール部分の中間部をカッター部で切断可能に設けた充填包装機において、前記フィルム巻反位置と前記フィルム折返部位置との間にフィルム縫ぎ目箇所を検出するフィルム繋ぎ目検出部を設けるとともに、前記カッター部の下方に位置して前記フィルム繋ぎ目検出部からの信号を受けて作動する仕分け受板を備えた小袋搬出部を設け、前記フィルム繋ぎ目検出部により通常のフィルム箇所とフィルムの縫ぎ目箇所とを判別し、かつこのフィルム縫ぎ目箇所の包装袋を前記小袋搬出部に設けた仕分け受板によって振り分け搬出するようにしたことにある。

【0010】

【作用】フィルム繋ぎ目検出部により通常の良品である

フィルム箇所と不良品として扱うフィルム縫ぎ目箇所の包装袋を小袋搬出部に設けた仕分け受板によって振り分け搬出する。

【0011】

【実施例】以下本発明の実施例を添付図面を参照にして説明する。なお、前記図12から図14と同一部分もしくは均等部分には同一符号を付して説明する。

【0012】図1から図11は本発明の一実施例を示し、充填包装機の機台1の側方には二つの保持枠2、2が設けられ、この保持枠2、2にはフィルムFをロール状に巻回したフィルム巻反Rが着脱交換可能に設けられているとともに、一方の保持枠2に装填されたフィルム巻反Rの終端部を検知して待機している他方の保持枠2に装填されたフィルム巻反Rの始端側を、たとえば接着などの手段により連続するフィルム接続機構13が設けられている。

【0013】前記機台1の上部にはフィルム弛み防止機構14が設けられ、このフィルム弛み防止機構14を通過したフィルムFを案内する案内ロール15がフィルム折返部4の上部に設けられ、この折返部4には折返しガイド9を移動させる調整機構16が設けられている。

【0014】この調整機構16は前記機台1の上部にナット体17をフィルムFの移送方向に対して横切る方向に回り止め状態で進退移動可能に配設し、このナット体17にねじ軸18を螺着し、機台1の上部にねじ軸18を正逆回転させるモータ19を取り付け、前記ナット体17に先端をU状面に形成した折返しガイド9を取り付けるとともに、この折返しガイド9に横シール部6の上方位置まで延びる棒状のガイド杆20を垂下している。

【0015】このガイド杆20に併設して横シール部6の上方位置まで伸びるノズル21が設けられ、このノズル21は図示しない充填装置によりフィルムF内に液体や粉体あるいは粘稠物質等の内容物Wを充填する。また前記ガイド杆20とノズル21とを挟んで縦シール部5の一対の縦ヒートシールロール10、10が配設され、機台1の前面に軸受台22を取り付け、この軸受台22間に前記両縦ヒートシールロール10、10を回動自在に軸支するとともに、一方の縦ヒートシールロール10と他方の縦ヒートシールロール10とにそれぞれ噛合するギヤ23、23を固定し、一方のギヤ23に被動ギヤ24を一体に設け、この被動ギヤ24に機台1内に設けた図示しない駆動装置により駆動する駆動ギヤ25を噛合し、両縦ヒートシールロール10、10の一侧にシール部材10Aを形成するとともに、このシール部材10Aの外周面にローレット加工を施し、さらに両縦ヒートシールロール10内部にヒータ（図示せず）を内蔵する。

【0016】また、前記縦シール部5の下方に配設された第1の横シール部6と、この第1の横シール部6の下方に配設された第2の横シール部7とは、それぞれ軸受台26間に両横ヒートシールロール11、11を回動自在に軸

支するとともに、一方の横ヒートシールロール11と他方の横ヒートシールロール11とにそれぞれ噛合するギヤ27を固定し、一方のギヤ27に被動ギヤ28を一体に設け、この被動ギヤ28に図示しない駆動装置により駆動する駆動ギヤ29を噛合し、両横ヒートシールロール11の外周にシール部材11Aを等角度間隔で取付るとともに、その内部にシール部材11Aを加熱するヒータ（図示せず）を内蔵する。

【0017】また第1、第2の横ヒートシールロール11、11の各ギヤ27にはそれぞれロータリエンコーダ30のギヤ31が噛合して、各横ヒートシールロール11の回転を検出して、この回転を電気信号として制御部（図示せず）により各駆動ギヤ25、29を回転駆動し、周期的な周速度で回転するように構成している。

【0018】また前記横シール部7の下方に配設されたカッター部8は、図示しないサーボモータなどからなる駆動装置により回転する回転軸32に回転刃8Aが設けられるとともに、この回転刃8Aに対応して機台1に設けた支持台33に固定刃8Bが設けられており、前記カッター部8の下方側にはカッター部8の作動により切断された小袋FWが案内される小袋搬出部34が設けられている。

【0019】また機台1の側部に位置し、前記フィルム接続機構13のフィルムFの引き出し側には、たとえば一方のフィルム巻反Rの終端側と待機していた他方のフィルム巻反Rの始端側とのフィルムFの継ぎ目箇所Jあるいはロール状に巻回されたフィルム巻反Rの中でのフィルムFの継ぎ目箇所J1を検出するフィルム繋ぎ目検出部35が設けられている。

【0020】また前記フィルム折返部4の折返しガイド9と前記縦ヒートシールロール10との間にはフィルム折返部4によって二つ折りに折り返されたフィルムFの折返両端縁F3、F4の幅方向のずれを検出するフィルム端ずれ検出部36が設けられている。

【0021】このフィルム端ずれ検出部36は、この実施例では図1から図3で示すように機台1に設けた取付板37に金属製材料からなる導電性部材38が取り付けられ、この導電性部材38は前記フィルム折返部4の折返しガイド9によって二つ折りに折り返されたフィルムFの折返両端縁F3、F4の内面側に配設されるとともに、この導電性部材38の両側部にはそれぞれ絶縁部材39、39を介して前記折り返されたフィルムFの折返両端縁F3、F4の外側から柔圧する導電性の検出部材40が取り付けられ、この検出部材40は柔軟性を有する板ばね40Aによって形成されており、この板ばね40Aの先端部を前記フィルムFの折返両端縁F3、F4の外側から前記導電性部材38へ向けて柔圧して設けられている。

【0022】また前記導電性部材38は図示しないが充填包装機のアース側へと電気的に接続されるとともに、各板ばね40A同志は電気コード41によって連結され、かつ

板ばね40Aの少なくとも一方側から電気コード41によってスイッチング手段となる検出回路42に接続され、この検出回路42を介して図示しない充填包装機の電源のプラス側へと電気的に接続されて前記フィルム端ずれ検出部36を構成している。

【0023】また前記フィルム接続機構13により、一方のフィルム巻反Rの終端側と待機している他方のフィルム巻反Rの始端側とのフィルムFの継ぎ目箇所Jには導電性箔シート43を貼り付け、このフィルムFの継ぎ目箇所Jに設けた導電性箔シート43によってフィルムFの移行とともに、前記フィルム繋ぎ目検出部35がフィルムFの継ぎ目箇所Jの導電性箔シート43と接触することにより、通常のフィルムF箇所と継ぎ目箇所Jとを判別するようにしている。

【0024】この場合、前記フィルム繋ぎ目検出部35は、機台1の側部に絶縁材からなる取付座44を設け、この取付座44に多数の導電性繊維45Aの基部を束ねた柄部分45Bを設けた可動接触部材となるブラシ45を左右一対に設け、この一方のブラシ45側を充填包装機の電源側のプラス側へ、他方のブラシ45側を充填包装機のマイナス側へとそれぞれ電気コード46を介して電気的に接続し、前記ロール状に巻回されたフィルム巻反Rから引き出し案内されたフィルムFにブラシ45の導電性繊維45Aを接触するように設けている。

【0025】このようにフィルム繋ぎ目検出部35の可動接触部材となる一対のブラシ45、45がフィルムFの継ぎ目箇所Jに設けた導電性箔シート43と接触することにより、各ブラシ45、45と導電性箔シート43とによって閉ループとなり電気的に接続され、これによりフィルムFの継ぎ目箇所Jであることが判別される。

【0026】このフィルム継ぎ目箇所Jが検知された後、フィルムFは順次縦ヒートシールロール10と横ヒートシールロール11、11およびカッター部8側へと送られていくが、このフィルム継ぎ目箇所Jの包装フィルムFの前後位置はカッター部8による切断を行わず、この連続的に繋がった包装袋FEのみを正常に充填包装した小袋FWと区別して不良品として扱い、次工程である小袋搬出部34によって切り換え搬出して良品の小袋FWと前記不良品として連包された包装袋FEとを仕分けるようにしている。

【0027】この場合、前記小袋搬出部34には前記カッター部8の下方に位置し、切断された良品である小袋FWを滑落するシューター47が配設され、このシューター47を介して図示しない搬出ベルトへと搬送される。また前記フィルム継ぎ目箇所Jに相応する不良品として信号を受けた連包された包装袋FEについては、シューター47の上方に設けた仕分け受板48が、その仕分け受板48に連結したシリンダ49の作動によって支軸48Aを基点として傾斜動し、落下してきた包装袋FEが仕分け受板48上に滑り落ち、この仕分け受板48とほぼ同じ傾斜した角度

に設定された滑落板50に沿って搬出させて不良品収容箱51内へ収容するように小袋搬出部34を構成している。

【0028】また前記ロール状に巻回されたフィルム巻反Rの中でのフィルムFの縫ぎ目箇所J1も前述したフィルムFの切り換えによる縫ぎ目箇所Jと同様に導電性箔シート43Aを貼り付けることにより前記フィルム縫ぎ目検出部35によって判別され、この縫ぎ目箇所J1の包装フィルムFの前後位置がカッター部8による切断がなされず連包したまま送り出され、この連包の状態の包装袋FEを不良品として扱い前記仕分け受板48の傾動動作に伴って不良品収容箱51内に搬送される。

【0029】また不良品として扱われた包装袋FEが仕分け受板48によって振り分けられた後、仕分け受板48はシリンダ49の作動によって上端側の支軸48Aを基点として元の位置に退避復帰し、良品である小袋FWをシューター47側へと搬出するようにしている。

【0030】上述したように本実施例においては、通常の包装状態にあってはロール状に巻かれたフィルム巻反RからフィルムFを引き出し案内し、この連続移送されるフィルムFをフィルム折返部4に送り、フィルム折返部4の折返しガイド9によりフィルムFをフィルムFの長手方向に沿って二つ折りに折返し、この折り返されたフィルムFの折込両端縁F3、F4を重ねて縦ヒートシールロール10により縦方向に縦シールし、この縦シール箇所F1によりフィルムFを筒状に形成し、第1の横ヒートシールロール11でフィルムFを横方向に横シールし、この横シール箇所F2により包装袋となる底部となる底部を形成し、この有底筒状に形成したフィルムF内に充填機構12により内容物Wを充填し、さらにフィルムFを送りつつ第1の横シール部6の横ヒートシールロール11によりフィルムFの袋口側を横シールして内容物Wを封止し、この封止されたフィルムFの横シール箇所F2を第2の横シール部7の横ヒートシールロール11によって二重に封着し、次いでその横シール箇所F2の中間部を回転刃8Aと固定刃8Bとからなるカッター部8によって切断し、この切り離された内容物Wを充填した小袋FWが小袋搬出部34のシューター47に落下して滑落し、図示しない良品を入れる収容箱内に収納されたり、搬出ベルト上に送られる。

【0031】また一方のフィルム巻反Rの終端側と待機している他方のフィルム巻反Rの始端側とのフィルムFの縫ぎ目箇所Jやロール状に巻回されたフィルム巻反Rの途中に設けてあるフィルムFの縫ぎ目箇所J1が引き出し案内されてきた場合、この実施例では各フィルム縫ぎ目箇所J、J1に設けた導電性箔シート43、43AによってフィルムFの移行とともに、フィルム縫ぎ目検出部35がフィルムFの縫ぎ目箇所J、J1の導電性箔シート43、43Aと接触することにより、フィルム縫ぎ目検出部35に設けた一对のブラシ45の導電性繊維45Aと前記導電性箔シート43、43Aとの接触によって閉ループとなり電

氣的に接続されてフィルムFの縫ぎ目箇所J、J1であることが判別され、この判別により前記縫ぎ目箇所J、J1であるフィルムFが順次縦ヒートシールロール10と横ヒートシールロール11およびカッター部8側へと送られていくが、前記フィルム縫ぎ目検出部35の信号に基づき、フィルム縫ぎ目箇所J、J1の包装フィルムFの前後位置を不良品箇所として扱ってカッター部8による切断を行わずに小袋FWを繋げた状態の連包したままの包装袋FEを排出するようにしている。

【0032】この際、前記フィルム縫ぎ目検出部35からの信号を受けて小袋搬出部34に設けた仕分け受板48がシリンダ49の作動によって支軸48Aを基点として傾斜動し、落下してきた前記連包状態の包装袋FEを傾斜状態に保持した仕分け受板48上に滑落させ、この仕分け受板48とはほぼ同じ傾斜した角度に設置した滑落板50に沿って搬出させて不良品として扱う前記包装袋FEを不良品収容箱51内へ収容することにより、良品である小袋FWと不良品扱いとする包装袋FEとを自動的に仕分けすることができ、従来のような作業による手作業で不良品を判別して仕分けするという煩わしい作業を取り除くことが可能となり、不良選別による省人化を図ることができる。

【0033】また内容物Wを充填した小袋FWを搬出する時、1つ1つの小袋FWをカッター部8によってそれぞれ分離した単包状態の小袋FWを搬出する場合と、充填包装機に設けたカッター部8の作動を停止状態とし、縦シール部5と横シール部6、7とを作動させて内容物Wを充填した小袋FWを繋げた連包状態の小袋FWを搬出する場合とがあり、この連包状態で小袋FWを搬出する際は、フィルムFの縫ぎ目箇所J、J1が引き出し案内されてきたときに、各フィルム縫ぎ目箇所J、J1に設けた導電性箔シート43、43AによってフィルムFの移行とともに、フィルム縫ぎ目検出部35が導電性箔シート43、43Aと接触してフィルム縫ぎ目検出部35に設けた一对のブラシ45の導電性繊維45Aと導電性箔シート43、43Aとの間で電氣的に閉ループとなってフィルムFの縫ぎ目箇所J、J1であることが判別され、この判別によりフィルム縫ぎ目箇所J、J1の包装フィルムFの前後位置の領域を不良品として扱って今まで停止状態を維持していたカッター部8が作動し、前記縫ぎ目箇所J、J1の前後をカッター部8によって切断し、この切断した包装袋FEのみを小袋搬出部34に設けた仕分け受板48の作動に伴って良品である連包状態で搬出される小袋FWとは別に仕分けられて搬出され、良品と不良品とを区別して搬送するようにしている。

【0034】なお、良品の連包状態で繋がったままの小袋FWは、次の工程でたとえば小袋FWを設定した数だけカウントして切り離し、箱の中に収納して梱包するようにしている。

【0035】なお、本発明は上記実施例に限定されるも

のではなく本発明の要旨の範囲内において種々の変形実施が可能であり、たとえば前述した実施例ではフィルム繋ぎ目検出部35に接点式の可動接触部材となる導電性繊維45Aによるブラシ45を左右一対に設けて構成していたが、フィルムFの継ぎ目箇所J、J1に設けた導電性箔シート43に柔圧して接触する導電性の板ばねによって可動接触部材を形成しても良いものであり、またコイル状に巻いた導電性のばね材によって可動接触部材を形成してもよい。

【0036】またフィルム繋ぎ目検出部35として無接点式である、たとえば発光部と受光部とを備えた光電式スイッチによりフィルムFの継ぎ目箇所J、J1の透過光量の変位などを検知してフィルム継ぎ目箇所J、J1の包装袋FEを小袋搬出部34に設けた仕分け受板48によって振り分け搬出するようにしてもよい。

【0037】また本発明では良品である小袋FWの不良品として扱う包装袋FEとを振り分けて搬出する小袋搬出部34に設けた仕分け受板48を、その仕分け受板48の上側に配設した支軸48Aを基点にして仕分け受板48の下側を傾斜動可能に形成していたが、小袋搬出部34に設けたシューター47上に壁状からなる仕分け受板を配設し、この仕分け受板を左右に振り分け移動可能に設けて良品である小袋FWと不良品として扱う包装袋FEとを左右に仕分けるようにしてもよい。

【0038】

【発明の効果】本発明は、ロール状に巻かれたフィルム巻反からフィルムを引き出し案内し、この引き出し案内されたフィルムをフィルム折返部に送り、このフィルム折返部によりフィルムを筒状に折返し、この折り返されたフィルムの折返両端縁を重ねて縦ヒートシールロールにより縦シールしてフィルムを筒状に形成するとともに、横ヒートシールロールにより横シールして包装袋となる底部を形成し、この有底筒状に形成したフィルム内に内容物を充填し、さらにフィルムを送りつつフィルムの袋口部側となる箇所を横ヒートシールロールにより横シールして連続包装し、この横シール部分の中間部をカッター部で切断可能に設けた充填包装機において、前記フィルム巻反位置と前記フィルム折返部位置との間にフィルム継ぎ目箇所を検出するフィルム繋ぎ目検出部を設けるとともに、前記カッター部の下方に位置して前記フィルム繋ぎ目検出部からの信号を受けて作動する仕分け受板を備えた小袋搬出部を設け、前記フィルム繋ぎ目検出部により通常のフィルム箇所とフィルムの継ぎ目箇所とを判別し、かつこのフィルム継ぎ目箇所の包装袋を前記小袋搬出部に設けた仕分け受板によって振り分け搬出するようにしたことにより、良品である小袋と不良品である包装袋とを簡単にかつ自動的に振り分けることができる。

【図面の簡単な説明】

【図1】本発明の一実施例を示す充填包装機の正面図で

ある。

【図2】本発明の一実施例を示す充填包装機の要部の側面図である。

【図3】本発明の一実施例を示すフィルム繋ぎ目検出部の斜視図である。

【図4】本発明の一実施例を示すフィルム繋ぎ目検出部の正面図である。

【図5】本発明の一実施例を示すフィルム供給状態の概要斜視図である。

【図6】本発明の一実施例を示すフィルム接続機構による継ぎ目箇所またはフィルム巻反の中でのフィルムの継ぎ目箇所の斜視図である。

【図7】本発明の一実施例を示すフィルムのシール状態の要部の斜視図である。

【図8】本発明の一実施例を示すシール部の要部の正面図である。

【図9】本発明の一実施例を示すシール部の要部の平面図である。

【図10】本発明の一実施例を示すフィルム端ずれ検出部の斜視図である。

【図11】本発明の一実施例を示すフィルム端ずれ検出部の底面図である。

【図12】従来例を示す充填包装機の正面図である。

【図13】従来例を示すフィルム供給状態の概略斜視図である。

【図14】従来例を示すフィルムのシール状態の要部の斜視図である。

【符号の説明】

- 1 機台
- 2 保持枠
- 3 フィルム案内部
- 4 フィルム折返部
- 5 縦シール部
- 6 第1の横シール部
- 7 第2の横シール部
- 8 カッター部
- 9 折返しガイド
- 10 縦ヒートシールロール
- 11 横ヒートシールロール
- 12 充填機構
- 13 フィルム接続機構
- 21 ノズル
- 34 小袋搬出部
- 35 フィルム繋ぎ目検出部
- 43, 43A 導電性箔シート
- 45 ブラシ
- 47 シューター
- 48 仕分け受板
- 48A 支軸
- 49 シリンダ

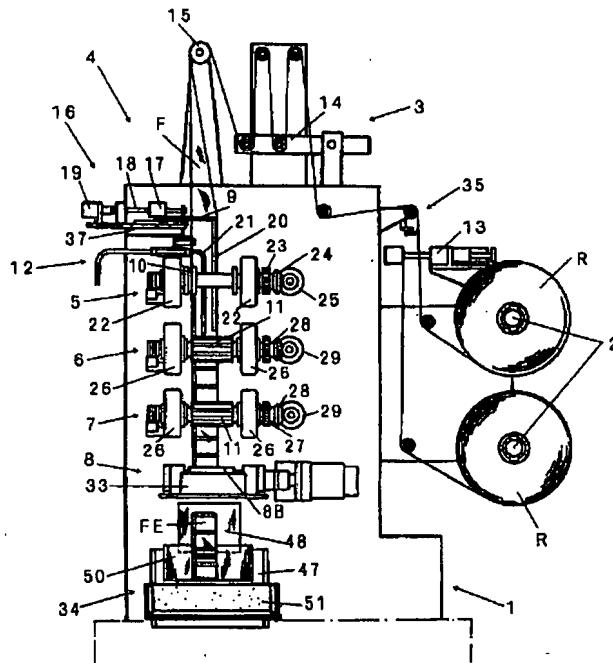
11

12

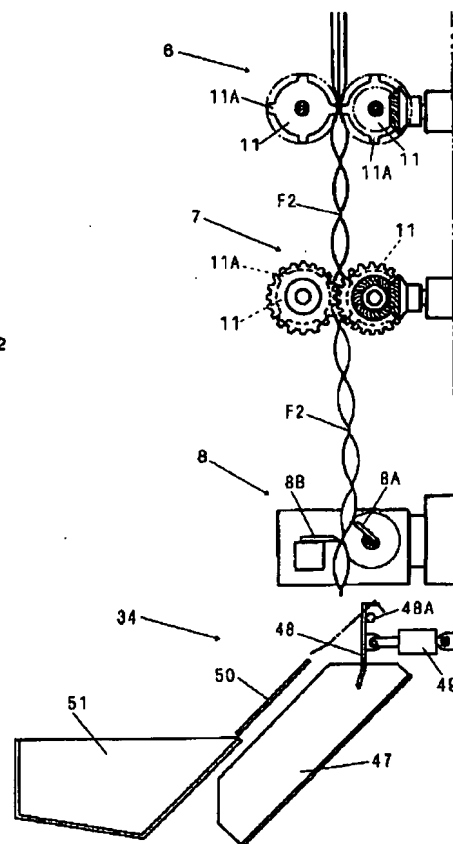
50 滑落板
F フィルム
R フィルム巻反
F1 縦シール箇所
F2 横シール箇所

W 内容物
J, J1 継ぎ目箇所
FW 小袋
FE 包装袋

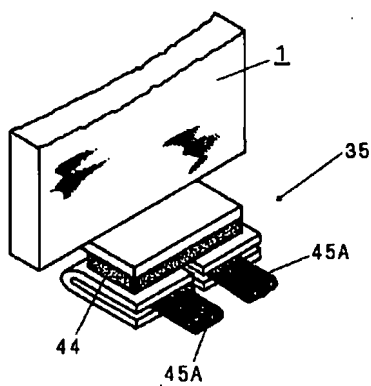
【図1】



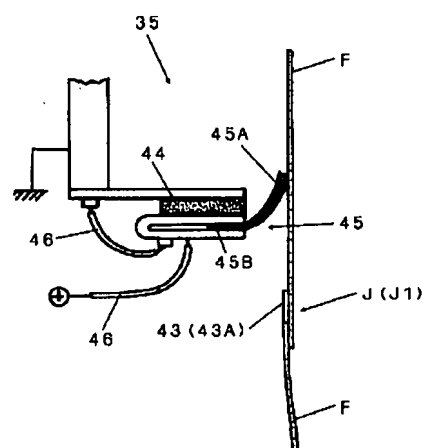
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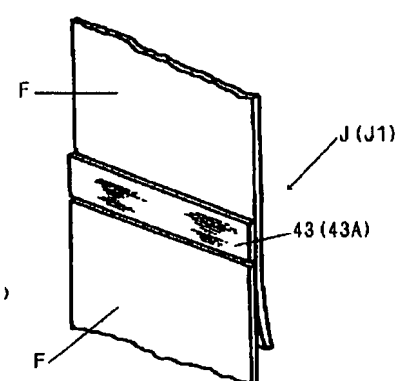
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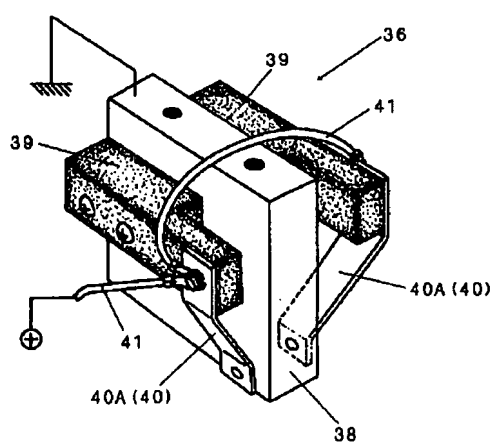
【図4】



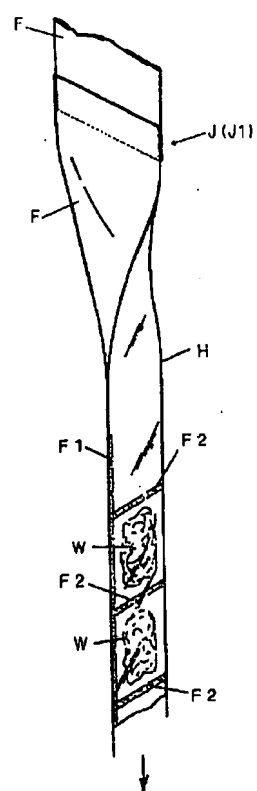
【図6】



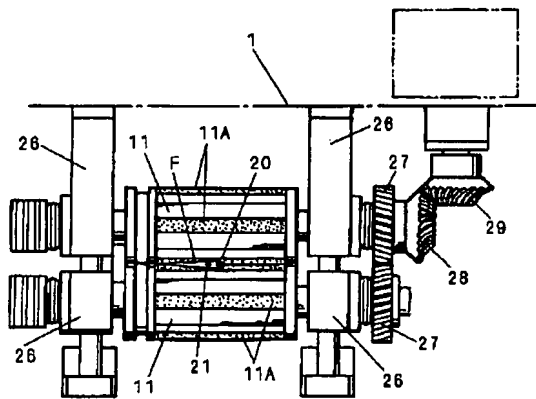
【☒10】



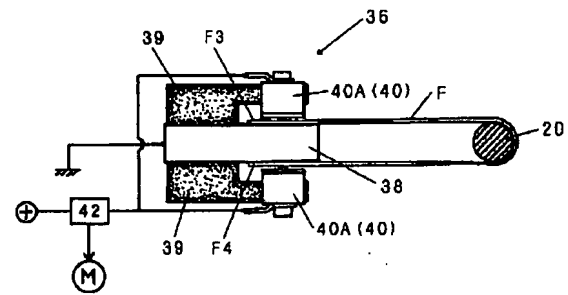
【例 13】



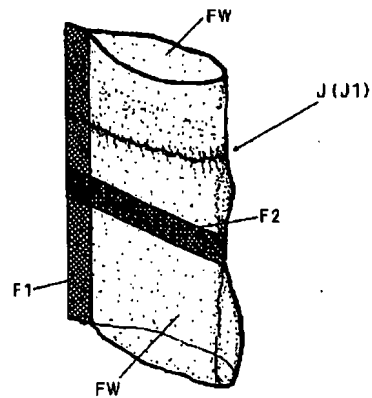
【図9】



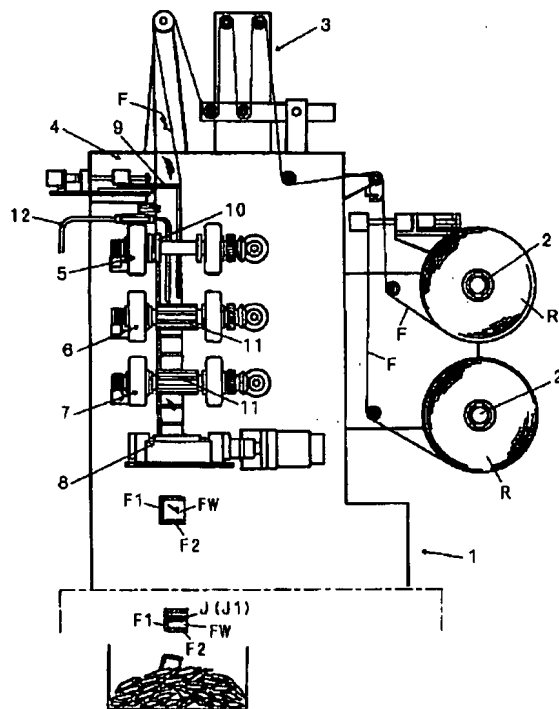
【図11】



【図14】



【図12】



フロントページの続き

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Notes:

1. Untranslatable words are replaced with asterisks (****).
2. Texts in the figures are not translated and shown as it is.

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Dictionary: Last updated 05/18/2007 / Priority:

CLAIMS

[Claim(s)]

[Claim 1] Pull out and guide a film from film **** rolled in the shape of a roll, and this film by which drawer guidance was carried out is sent to a film cuff part. While turning up a film to tubed by this film cuff part, carrying out the vertical seal of the cuff both-ends edge of this turned-up film with a vertical heat-sealing roll in piles and forming a film in tubed The bottom which carries out a horizontal seal with a horizontal heat-sealing roll, and serves as a packing bag is formed. Carry out the horizontal seal of the part which becomes the bag mouth part side of a film being filled up with a content and sending a film further in the film formed in the shape of [this] a cylinder like object with base with a horizontal heat-sealing roll, and continuation packing is carried out. While preparing the film knot primary detecting element which detects a film joint part between said film **** position and said film cuff part position in the restoration packaging machine which prepared the intermediate part of this horizontal seal portion possible [cutting] in the cutter part Prepare the small bag taking-out part equipped with the classification strike plate which is located under said cutter part and operates in response to the signal from said film knot primary detecting element, and the usual film part and the joint part of a film are distinguished by said film knot primary detecting element. And the restoration packaging machine characterized by the thing which prepared the packing bag of this film joint part in said small bag taking-out part, and which it classifies, and was distributed and taken out with the strike plate.

[Claim 2] When it distinguishes that it is a film joint part by said film knot primary detecting element The restoration packaging machine according to claim 1 characterized by making it discharge suspending the cutting operation of said cutter part based on the signal of a film knot primary detecting element, and carrying out the successive package of the packing film order position of said film joint part.

[Claim 3] In film parts other than the joint part of said film While suspending the cutting

operation of said cutter part, when it distinguishes that it is a film joint part by said film knot primary detecting element Based on the signal of a film knot primary detecting element, the cutting operation only of the packing film order position of a film joint part is carried out in said cutter part. The restoration packaging machine according to claim 1 characterized by the thing which prepared the packing bag of the cut film joint part in said small bag taking-out part, and which it classifies, and was distributed and taken out with the strike plate.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention manufactures the film rolled in the shape of a roll, and relates to the restoration packaging machine filled up with contents, such as a liquid, a granular material, or a viscous substance, in the small bag.

[0002]

[Description of the Prior Art] As a conventional restoration packaging machine which carries out restoration packing of the contents, such as a liquid, a granular material, or a viscous substance, automatically For example, as shown in JP,H2-46265,A, JP,H2-32929,A, etc. Turn up the film by which a continuation transfer is carried out and the vertical seal of the cuff both-ends edge of the film is carried out in piles. If it is filled up with a content in this film that carried out the vertical seal, what carries out the horizontal seal of this film is known and drawing 14 explains this example from drawing 12, it will set to this figure. 1 is a machine stool, the maintenance frame 2 is formed in that flank, and film **** R which wound Film F around this maintenance frame 2 in the shape of a roll is formed possible [attachment-and-detachment exchange]. The film guiding part 3 and the film cuff part 4 are arranged in the upper part of a machine stool 1. The front part of a machine stool 1 is equipped with the vertical seal part 5, the 1st and 2nd horizontal seal part 6 and 7, and the cutter part 8 from the bottom. From one roll-like film **** R, pull out Film F and it draws in the film cuff part 4 through the film guiding part 3. With a pair of vertical heat-sealing rolls 10 with which the tip established in the film cuff part 4 folds Film F in half along with a longitudinal direction the cuff guide 9 which makes the shape of a U character, and the vertical seal part 5 counters, carry out the heat seal of the cuff end comrade of Film F, and he is seen out. Form Film F in tubed according to this vertical seal part F1, and the heat seal of the film F is carried out to a transverse direction by a pair of horizontal heat-sealing rolls 11 with which the 1st horizontal seal part 6 counters, and 11. In the film F which formed the bottom which serves as a packing bag according to this horizontal seal part F2, and was formed in the shape of a cylinder like object with base by this, [with the filling machine style 12] For example, it is filled up with the content W which consists of liquids, such as a source, and Film F is sent further, carry out the horizontal seal of the bag mouth side

of Film F again by the horizontal heat-sealing roll 11 of the 1st horizontal seal part 6, and 11, and Content W is closed. This horizontal seal part F2 is further sealed by the horizontal heat-sealing roll 11 of the 2nd horizontal seal part 7, and 11, and, subsequently the intermediate part of the horizontal seal part F2 is cut in the cutter part 8, and it constitutes so that it may take out and convey by conveyor which this does not illustrate by performing film packaging. [0003]

[Problem to be solved by the invention] In the conventional restoration packaging machine mentioned above, when one film **** R is completed, operation of equipment is stopped. It loaded with new film **** R, Film F was pulled out, guidance credit of this film F was carried out by manual labor between the guide rollers of a series of equipment, and work time-consuming [, such as doing crosswise position **** again further] was done.

[0004] As a thing in consideration of this point, spare film **** R is beforehand set to the side of the machine stool 1 of a packaging machine, and when the film F of film **** R in use has been consumed, the film connection mechanism automatically connected to the film F start edge side from spare film **** R is proposed.

[0005] In this case, if some small bags FW which the joint part J of Film F packed are started Commodity value falls that the type of packing worsens easily, and depending on the case, Content W may leak and it may come out from a joint part. Even though there is a problem that the small bag FW which hits the joint part J by this must be treated as inferior goods, and must be sorted out and it removed the inferior goods manually, it was time-consuming work.

[0006] Moreover, in film **** R if the interval of the length of Film F is short on the manufacturing process The short comrade's film F may be connected, it may involve in in the shape of a roll, and one film **** R may be formed. In this case, since the joint part J1 of Film F existed by connecting the middle of film **** R even if it is, as it mentioned above Since the type of packing would worsen if the joint part J1 of roll-like film **** R starts a part of the small bag FW when manufacturing bags with equipment and making a small bag FW, it treated as inferior goods and there was a problem that it had to sort out with the small bag FW of an excellent article.

[0007] Moreover, if it is when make into a halt condition the operation of the cutter part 8 prepared in the restoration packaging machine, making it take out packing a small bag FW to successively packaged voice continuously with the vertical heat-sealing roll 10 and the horizontal heat-sealing roll 11 and making it store in a box It was very troublesome, in order to have to sort out as inferior goods and to have to remove the joint part J and the small bag FW of J1 manually by a cutter etc., checking only the small bag FW portion which hits the joint part J of each of said film F, and J1.

[0008] Then, this invention aims at offering the restoration packaging machine which can distribute automatically the packing bag which detected the joint part of the film automatically,

treated the small bag applicable to a joint part as inferior goods in the packaging operation process, and was treated as the inferior goods, and the small bag which is an excellent article, and can take it out.

[0009]

[Means for solving problem] This invention pulls out and guides a film from film **** rolled in the shape of a roll. Send this film by which drawer guidance was carried out to a film cuff part, and a film is turned up to tubed by this film cuff part. While carrying out the vertical seal of the cuff both-ends edge of this turned-up film with a vertical heat-sealing roll in piles and forming a film in tubed The bottom which carries out a horizontal seal with a horizontal heat-sealing roll, and serves as a packing bag is formed. Carry out the horizontal seal of the part which becomes the bag mouth part side of a film being filled up with a content and sending a film further in the film formed in the shape of [this] a cylinder like object with base with a horizontal heat-sealing roll, and continuation packing is carried out. While preparing the film knot primary detecting element which detects a film joint part between said film **** position and said film cuff part position in the restoration packaging machine which prepared the intermediate part of this horizontal seal portion possible [cutting] in the cutter part Prepare the small bag taking-out part equipped with the classification strike plate which is located under said cutter part and operates in response to the signal from said film knot primary detecting element, and the usual film part and the joint part of a film are distinguished by said film knot primary detecting element. And it is in the thing which prepared the packing bag of this film joint part in said small bag taking-out part and which it classifies, and was distributed and taken out with the strike plate.

[0010]

[Function] The packing bag of the film joint part treated by a film knot primary detecting element as the film part which is the usual excellent article, and inferior goods is distributed and taken out with the classification strike plate formed in the small bag taking-out part.

[0011]

[Working example] Below, an accompanying drawing is made reference and the working example of this invention is explained. In addition, the same mark is attached and explained to the same portion as drawing 14, or an equal portion from said drawing 12.

[0012] While drawing 11 shows one working example of this invention from drawing 1 , two maintenance frames 2 and 2 are formed in the side of the machine stool 1 of a restoration packaging machine and film **** R which wound Film F around these maintenance frames 2 and 2 in the shape of a roll is formed possible [attachment-and-detachment exchange] In the start edge side of film **** R with which the maintenance frame 2 of another side which detects the termination part of film **** R with which one maintenance frame 2 was loaded, and is standing by was loaded, the film connection mechanism 13 which continues, for example by

adhesion or other means is established.

[0013] The film slack prevention mechanism 14 is formed in the upper part of said machine stool 1, the guidance roll 15 to which it shows the film F which passed this film slack prevention mechanism 14 is formed in the upper part of the film cuff part 4, and the adjustment mechanism 16 to which a guide 9 is moved by return is formed in this cuff part 4.

[0014] This adjustment mechanism 16 is arranged in the direction which crosses the nut object 17 to the transfer direction of Film F in the upper part of said machine stool 1 possible [attitude movement] in the surroundings stop state. While screwing the screw axis 18 on this nut object 17, attaching the motor 19 which makes the upper part of a machine stool 1 right-reverse-rotate the screw axis 18 and attaching the cuff guide 9 which formed the tip in U-like side at said nut object 17 The cylindrical guide lever 20 prolonged to the upper part position of the horizontal seal part 6 to this cuff guide 9 is hung.

[0015] The nozzle 21 which annexes to this guide lever 20 and is extended to the upper part position of the horizontal seal part 6 is formed, and this nozzle 21 is filled up with the contents W, such as a liquid, a granular material, or a viscous substance, in Film F with the restoration equipment which is not illustrated. Moreover, on both sides of said guide lever 20 and a nozzle 21, a pair of vertical heat-sealing rolls 10 of the vertical seal part 5 and 10 are arranged. While attaching the axle hole stand 22 to the front of a machine stool 1 and supporting 10 to revolve between this axle hole stand 22, enabling said both length heat-sealing roll 10 and free rotation The gear 23 which gears, respectively, and 23 are fixed to one vertical heat-sealing roll 10 and the vertical heat-sealing roll 10 of another side. The drive gear 25 driven with the drive which formed the passive-movement gear 24 in one gear 23 at one, and was formed in the machine stool 1 at this passive-movement gear 24, and which is not illustrated is geared. While forming the seal member 10A in the both length heat-sealing roll 10 and 1 side of 10, Laurette processing is given to the peripheral face of this seal member 10A, and a heater (not shown) is further built in both length heat-sealing roll 10 inside.

[0016] [moreover, the 1st horizontal seal part 6 arranged under said vertical seal part 5 and the 2nd horizontal seal part 7 arranged under this 1st horizontal seal part 6] While supporting 11 to revolve between the axle hole stands 26, respectively, enabling both the horizontal heat-sealing roll 11 and free rotation The gear 27 which gears, respectively is fixed to one horizontal heat-sealing roll 11 and the horizontal heat-sealing roll 11 of another side. Form the passive-movement gear 28 in one gear 27 at one, gear the drive gear 29 driven with the drive which is not illustrated on this passive-movement gear 28, and the seal member 11A by an equiangular distance on the perimeter of both the horizontal heat-sealing roll 11 [*****] The heater (not shown) which heats the seal member 11A is built in the inside.

[0017] Moreover, on each gear 27 of the 1st and 2nd horizontal heat-sealing roll 11 and 11, the gear 31 of a rotary encoder 30 gears, respectively. Rotation of each horizontal heat-sealing roll

11 is detected, and each drive gear 25 and 29 are rotated by a control part (not shown) by making this rotation into an electric signal, and it constitutes so that it may rotate with periodic peripheral velocity.

[0018] [moreover, the cutter part 8 arranged under said horizontal seal part 7] While a rotary blade 8A is formed in the axis of rotation 32 which rotates with the drive which consists of a servomotor which is not illustrated The fixed edge 8B is formed in the support stand 33 prepared in the machine stool 1 corresponding to this rotary blade 8A, and the small bag taking-out part 34 to which it is shown to the small bag FW cut by the operation of the cutter part 8 is formed in the lower part side of said cutter part 8.

[0019] Moreover, it is located in the flank of a machine stool 1, and [the drawer side of the film F of said film connection mechanism 13] For example, the film knot primary detecting element 35 which detects the joint part J1 of the film F in the inside of film **** R wound the joint part J or the shape of a roll of Film F by the side of the start edge of film **** R of another side which was standing by is formed the termination side of one film **** R.

[0020] Moreover, between the cuff guide 9 of said film cuff part 4, and said vertical heat-sealing roll 10, the cuff both-ends edge F3 of the film F turned up by double fold by the film cuff part 4 and the film end gap primary detecting element 36 which detects a gap of the cross direction of F4 are formed.

[0021] The conductive member 38 which becomes the tie-down plate 37 formed in the machine stool 1 as drawing 3 showed this film end gap primary detecting element 36 from drawing 1 in this working example from metal material is attached. [the member] while this conductive member 38 is arranged in the cuff both-ends edge [of the film F turned up by double fold by the cuff guide 9 of said film cuff part 4] F3, and inside side of F4 The insulating member 39 and the conductive primary detecting element material 40 which carries out ** pressure through 39 from the cuff both-ends edge [of said turned-up film F] F3 and external surface side of F4 are attached to the both-sides part of this conductive member 38, respectively. This primary detecting element material 40 is formed with the board spring 40A which has pliability, and from the cuff both-ends edge [of said film F] F3, and external surface side of F4, it turns the tip part of this board spring 40A to said conductive member 38, and ** pressure carries out it, and it is prepared.

[0022] Moreover, although said conductive member 38 is not illustrated, while connecting with the ground side of a restoration packaging machine electrically Each board spring 40A comrade is connected by the power cord 41, and it connects with the detector circuit 42 of the board spring 40A which serves as a switching means from one side in electric code 41 at least. It connects with the plus side of the power supply of the restoration packaging machine which is not illustrated through this detector circuit 42 electrically, and said film end gap primary detecting element 36 is constituted.

[0023] Moreover, the conductive foil sheet 43 is stuck on the joint part J of the film F by the side of the start edge of film **** R of another side which is standing by the termination side of one film **** R according to said film connection mechanism 13. When said film knot primary detecting element 35 contacts the conductive foil sheet 43 of the joint part J of Film F with shift of Film F, he is trying to distinguish the usual film F part and the joint part J with the conductive foil sheet 43 prepared in the joint part J of this film F.

[0024] [in this case, said film knot primary detecting element 35] The brush 45 used as the movable contact member which formed the attachment seat 44 which becomes the flank of a machine stool 1 from an insulation material, and prepared a part for the pedicel 45B which governed the base of many conductive fibers 45A to this attachment seat 44 is formed in one pair of right and left. The brush 45 side of another side is electrically connected to the plus side by the side of the power supply of a restoration packaging machine to the minus side of a restoration packaging machine respectively through the electric code 46 for the brush 45 side of one of these. It has prepared so that the film F pulled out and guided from film **** R wound in the shape of [said] a roll may be contacted in the conductive fiber 45A of a brush 45.

[0025] Thus, by contacting a pair of brushes 45 used as the movable contact member of the film knot primary detecting element 35, and the conductive foil sheet 43 which 45 prepared in the joint part J of Film F It becomes a closed loop with each brush 45, and 45 and the conductive foil sheet 43, and connects electrically, and it is distinguished that it is the joint part J of Film F by this.

[0026] [after this film joint part J is detected, Film F is sent to the vertical heat-sealing roll 10, horizontal heat-sealing roll 11, 11, and cutter part 8 side one by one, but] The packing film F order position of this film joint part J does not perform cutting by the cutter part 8. He is trying to classify the packing bag FE by which treated only this packing bag FE connected continuously as inferior goods in distinction from the small bag FW which carried out restoration packing normally, switched and took it out by the small bag taking-out part 34 which is the following process, and the successive package was carried out as the small bag FW and said inferior goods of an excellent article.

[0027] In this case, the shooter 47 which is located in said small bag taking-out part 34 under said cutter part 8, and slips down the small bag FW which is the cut excellent article is arranged, and it is conveyed to the taking-out belt which is not illustrated through this shooter 47. moreover, [bag / FE / by which the successive package was carried out / which received the signal as inferior goods which **** in said film joint part J / packing] It ***** on the basis of Pivot 48A by the operation of the cylinder 49 which was classified and the strike plate 48 connected with the classification strike plate 48 established above the shooter 47. The packing bag FE which has fallen classifies and it slides down on a strike plate 48, and the small bag taking-out part 34 is constituted so that it may be made to take out along the slipping-down

board 50 top set as the almost same inclined angle as this classification strike plate 48 and may accommodate into the inferior-goods accommodation box 51.

[0028] Moreover, it is distinguished by said film knot primary detecting element 35 by sticking the conductive foil sheet 43A like the joint part J by the change of the film F which also mentioned above the joint part J1 of the film F in the inside of film **** R wound in the shape of [said] a roll. Cutting according [the packing film F order position of this joint part J1] to the cutter part 8 is not made, but it is sent out with a successive package carried out, the packing bag FE of the state of this successive package is treated as inferior goods, and it is conveyed in the inferior-goods accommodation box 51 with the tilting operation of said classification strike plate 48.

[0029] Moreover, after the packing bag FE treated as inferior goods classifies and a strike plate 48 is able to distribute, the classification strike plate 48 carries out an evacuation return on the basis of the pivot 48A of upper one end by the operation of a cylinder 49 in the original position, and he is trying to take out the small bag FW which is an excellent article to the shooter 47 side.

[0030] Film F is pulled out and guided from film **** R rolled in the shape of a roll if it was in the usual type of packing in this example as mentioned above. Send this film F by which a continuation transfer is carried out to the film cuff part 4, and Film F is turned up to double fold along with the longitudinal direction of Film F by the cuff guide 9 of the film cuff part 4. The vertical seal of the insertion both-ends edge F3 of this turned-up film F and F4 is carried out to a lengthwise direction with the vertical heat-sealing roll 10 in piles. Form Film F in tubed according to this vertical seal part F1, and the horizontal seal of the film F is carried out to a transverse direction with the 1st horizontal heat-sealing roll 11. The bottom which serves as a packing bag according to this horizontal seal part F2, and the becoming bottom are formed. It is filled up with Content W by the filling machine style 12 in the film F formed in the shape of [this] a cylinder like object with base. Furthermore, sending Film F, carry out the horizontal seal of the bag mouth side of Film F with the horizontal heat-sealing roll 11 of the 1st horizontal seal part 6, and Content W is closed. Seal doubly the horizontal seal part F2 of this closed film F with the horizontal heat-sealing roll 11 of the 2nd horizontal seal part 7, and, subsequently the cutter part 8 which consists of a rotary blade 8A and a fixed edge 8B cuts the intermediate part of that horizontal seal part F2. The small bag FW filled up with this separated content W is stored in the accommodation box which puts the excellent article which it falls, and is not slipped down and illustrated into the shooter 47 of the small bag taking-out part 34, or is sent on a taking-out belt.

[0031] Moreover, when the joint part J1 of Film F established in the middle of film **** R wound the joint part J and the shape of a roll of Film F by the side of the start edge of film **** R of another side which is standing by the termination side of one film **** R pulled out and has

been shown, By the conductive foil sheet 43 prepared in each film joint part J and J1 in this working example, and 43A, [shift / Film F] When the film knot primary detecting element 35 contacts the joint part J of Film F, the conductive foil sheet 43 of J1, and 43A Become a closed loop by contact with the conductive fiber 45A of a pair of brushes 45 formed in the film knot primary detecting element 35, and said conductive foil sheets 43 and 43A, connect electrically, and it is distinguished that it is the joint part J of Film F and J1. Although the film F which are said joint part J and J1 is sent one by one to the vertical heat-sealing roll 10, horizontal heat-sealing roll 11, and cutter part 8 side by this distinction, it is based on the signal of said film knot primary detecting element 35. He is trying to discharge the that state's where small bag's FW was connected without treating film joint part J and packing film F order position's of J's1 as inferior-goods part, and performing cutting by cutter part 8 has carried out successive package's packing bag FE.

[0032] Under the present circumstances, the classification strike plate 48 formed in the small bag taking-out part 34 in response to the signal from said film knot primary detecting element 35 ***** on the basis of Pivot 48A by the operation of a cylinder 49. The packing bag FE of said successively packaged voice which has fallen is made to slip down on the classification strike plate 48 held in the inclination state. By accommodating said packing bag FE which is made to take out along the slipping-down board 50 top installed in the almost same inclined angle as this classification strike plate 48, and is treated as inferior goods into the inferior-goods storage box 51 The packing bag FE considered as the small bag FW which is an excellent article, and inferior-goods treatment can be classified automatically, it becomes possible to remove the troublesome work of distinguishing and classifying inferior goods by the manual labor by a worker like before, and ** people-ization by poor sorting can be attained.

[0033] Moreover, when taking out the small bag FW filled up with Content W and the small bag FW in the single package state where the cutter part 8 separated each small bag FW, respectively is taken out, The small bag FW of the successively packaged voice which connected the small bag FW which the operation of the cutter part 8 prepared in the restoration packaging machine was made into the halt condition, and the vertical seal part 5 and the horizontal seal parts 6 and 7 were operated, and was filled up with Content W may be taken out. When taking out a small bag FW by this successively packaged voice, and the joint part J of Film F and J1 pull out and have been guided, by the conductive foil sheet 43 prepared in each film joint part J and J1, and 43A [shift / Film F] The film knot primary detecting element 35 contacts the conductive foil sheet 43 and 43A. Become a closed loop electrically between the conductive fiber 45A and the conductive foil sheet 43 of a pair of brushes 45 which were prepared in the film knot primary detecting element 35, and 43A, and it is distinguished that it is the joint part J of Film F and J1. The cutter part 8 which treated the film joint part J and the field of the packing film F order position of J1 as inferior goods by this

distinction, and was maintaining the halt condition until now operates, and the cutter part 8 cuts said joint part J and J1 order. It is classified independently [the small bag FW taken out by the successively packaged voice which formed only this cut packing bag FE in the small bag taking-out part 34, and which it classifies and is an excellent article in connection with the operation of a strike plate 48], and is taken out, and he distinguishes an excellent article and inferior goods, and is trying to convey.

[0034] In addition, the small bag [having been connected in the successively packaged voice of an excellent article] FW counts and separates only the number which set up the small bag FW at the following process, and he stores it in a box, and is trying to pack it up.

[0035] In addition, this invention is not limited to the above-mentioned working example, and various modification implementation is possible for it within the limits of the summary of this invention. For example, although the brush 45 by the conductive fiber 45A which serves as a movable contact member of a contact type at the film knot primary detecting element 35 was formed in one pair of right and left and constituted from a working example mentioned above You may form a movable contact member by the conductive spring material which was carried out, and may form a movable contact member and ** pressure wound around the conductive foil sheet 43 prepared in the joint part J of Film F, and J1 in the shape of a coil with the conductive board spring which contacts.

[0036] Moreover, it is a non-point-of-contact type as a film knot primary detecting element 35. For example, you may make it distribute and take out with the classification strike plate 48 which detected displacement of the joint part J of Film F, and the penetration light volume of J1 etc. with the photoelectric method switch equipped with the light-emitting part and the light sensing portion, and formed the film joint part J and the packing bag FE of J1 in the small bag taking-out part 34.

[0037] Moreover, although it classified on the basis of the pivot 48A which was prepared in the small bag taking-out part 34 which distributes and takes out the packing bag FE treated as inferior goods of the small bag FW which is an excellent article and which classified and arranged the strike plate 48 in the classification strike plate 48 bottom and the strike plate 48 bottom was formed possible [*****] in this invention The classification strike plate which consists of the shape of a wall is arranged on the shooter 47 which prepared in the small bag taking-out part 34, and this classification strike plate is distributed to right and left, it prepares possible [movement], and you may make it classify the small bag FW which is an excellent article, and the packing bag FE treated as inferior goods right and left.

[0038]

[Effect of the Invention] This invention pulls out and guides a film from film **** rolled in the shape of a roll. Send this film by which drawer guidance was carried out to a film cuff part, and a film is turned up to tubed by this film cuff part. While carrying out the vertical seal of the cuff

both-ends edge of this turned-up film with a vertical heat-sealing roll in piles and forming a film in tubed The bottom which carries out a horizontal seal with a horizontal heat-sealing roll, and serves as a packing bag is formed. Carry out the horizontal seal of the part which becomes the bag mouth part side of a film being filled up with a content and sending a film further in the film formed in the shape of [this] a cylinder like object with base with a horizontal heat-sealing roll, and continuation packing is carried out. While preparing the film knot primary detecting element which detects a film joint part between said film **** position and said film cuff part position in the restoration packaging machine which prepared the intermediate part of this horizontal seal portion possible [cutting] in the cutter part Prepare the small bag taking-out part equipped with the classification strike plate which is located under said cutter part and operates in response to the signal from said film knot primary detecting element, and the usual film part and the joint part of a film are distinguished by said film knot primary detecting element. And by [which prepared the packing bag of this film joint part in said small bag taking-out part] classifying and having made it distribute and take out with a strike plate, the small bag which is an excellent article, and the packing bag which is inferior goods can be distributed simply and automatically.

[Translation done.]

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This English translation is produced by machine translation and may contain errors. The JPO, the INPIT, and those who drafted this document in the original language are not responsible for the result of the translation.

Notes:

1. Untranslatable words are replaced with asterisks (****).
2. Texts in the figures are not translated and shown as it is.

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Dictionary: Last updated 05/18/2007 / Priority:

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the front view of the restoration packaging machine in which one working example of this invention is shown.

[Drawing 2] It is the side view of the important section of the restoration packaging machine in which one working example of this invention is shown.

[Drawing 3] It is the perspective view of a film knot primary detecting element showing one working example of this invention.

[Drawing 4] It is the front view of a film knot primary detecting element showing one working example of this invention.

[Drawing 5] It is the outline perspective view of a film supply state which shows one working example of this invention.

[Drawing 6] It is the perspective view of the joint part by the film connection mechanism which shows one working example of this invention, or the joint part of the film in the inside of film

[Drawing 7] It is the perspective view of the important section of a seal state of a film which shows one working example of this invention.

[Drawing 8] It is the front view of the important section of a seal part showing one working example of this invention.

[Drawing 9] It is the top view of the important section of a seal part showing one working example of this invention.

[Drawing 10] It is the perspective view of a film end gap primary detecting element showing one working example of this invention.

[Drawing 11] It is the bottom view of a film end gap primary detecting element showing one working example of this invention.

[Drawing 12] It is the front view of the restoration packaging machine in which the conventional

example is shown.

[Drawing 13] It is the outline perspective view of a film supply state which shows the conventional example.

[Drawing 14] It is the perspective view of the important section of a seal state of a film which shows the conventional example.

[Explanations of letters or numerals]

- 1 Machine Stool
- 2 Maintenance Frame
- 3 Film Guiding Part
- 4 Film Cuff Part
- 5 Vertical Seal Part
- 6 1st Horizontal Seal Part
- 7 2nd Horizontal Seal Part
- 8 Cutter Part
- 9 Cuff Guide
- 10 Vertical Heat-Sealing Roll
- 11 Horizontal Heat-Sealing Roll
- 12 Filling Machine Style
- 13 Film Connection Mechanism
- 21 Nozzle
- 34 Small Bag Taking-Out Part
- 35 Film Knot Primary Detecting Element
- 43 43A Conductive foil sheet
- 45 Brush
- 47 Shooter
- 48 Classification Strike Plate
- 48A Pivot
- 49 Cylinder
- 50 Slipping-Down Board
- F Film
- R Film ****
- F1 Vertical seal part
- F2 Horizontal seal part
- W Content
- J, J1 Joint part
- FW Small bag
- FE Packing bag

[Translation done.]